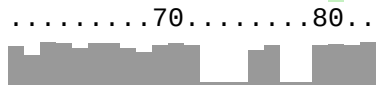
```
                                 (((((((..((((........)))).(((((.......)))))).....(((....(..
chr-LG06.trna303-Ala-CGC    GUUAGUGUAGCUCAUAUGGUAGAGCACUCGCUUCGCAUGCGAGAGAC-ACAGG----GUU 55
chr-LG18.trna13-Ala-CGC     GGGGAUGUAGCUCAAAUAGUAGGGCGCUUGCUUCGCAUGUAAGAAGU-GCAGG----GAU 55
chr-LG18.trna12-Ala-CGC     GGGGAUGUAGCUAACAUGGUAGAGCGCUCGCUUCGCAUGCGAGAUGU-ACAGG----GAU 55
chr-LG01.trna486-Ala-CGC    GGGGAUGUAGCUCAGAUGGUAGAGCGCUUGCUUCGCAUGUGAGAAGU-ACGGG----GAU 55
chr-LG01.trna436-Ala-CGC    GGGGACGUAGCUCAGAUGGUAGAGCACUCGCUUCGCAUGUGAGAAGU-ACGGG----AAU 55
chr-LG07.trna131-Ala-CGC    GGAGAUGUAGUUCAAAUGGUAGAGCGCUCGCUUCGCAUGUGAGAGGU-ACGAA----GAU 55
chr-LG07.trna89-Ala-CGC     GGGGAUGUAGCUCAGAUGGUAGAGCGUUCACUUCGCAUGUGAGAGGU-AUGAG----GAU 55
chr-LG03.trna322-Ala-CGC    -GGGAUGUAGCUCAGAUGGUAGAGCGCUCGCUUCGCAUGUGAAAAGU-ACGGG----GAU 54
chr-LG15.trna36-Ala-CGC     GGGGGUGUAGCUCAUAUGGUAGAGCGCUUGCUUCGCAUGCGAGAGGC-ACGGU----GUU 55
chr-LG06.trna267-Ala-CGC    GGGGGUGUAGCUCAUAUGGUAGAGCGCUUGCUUCGCAUGCGAGAGGC-ACAGG----GUU 55
chr-LG15.trna32-Ala-CGC     GGGGGUGUAGCUCAUAUGGUAGAGCGCUUGCUUCGCAUGCGAGAGGC-ACGGG----GUU 55
chr-LG15.trna33-Ala-CGC     GGGGGUGUAGCUCAUAUGGUAGAGCGCUUGCUUCGCAUGCGAGAGGC-ACGGG----GUU 55
chr-LG06.trna339-Ala-CGC    GGGGGUGUAGCUCAUAUGGUAGAGCGCUUGCUUCGCAUGCGAGAGGC-ACGGG----GUU 55
chr-LG06.trna277-Ala-CGC    GGGGGUGUAGCUUAUAUGGUAGAGCGCUUGCUUCGCAUGCGAGAGGC-AUGGG----GUU 55
chr-LG06.trna347-Ala-CGC    GGGGGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-GCAGG----GUU 55
chr-LG15.trna24-Ala-CGC     GGGGGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACGAG----GUU 55
chr-LG06.trna300-Ala-CGC    GGGGGUAUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACGAG----GUU 55
chr-LG02.trna24-Ala-CGC     GGGGGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACGGG----GUU 55
chr-LG02.trna213-Ala-CGC    GGGGGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACGGG----GUU 55
chr-LG06.trna398-Ala-CGC    GGGGGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACGGG----GUU 55
chr-LG07.trna171-Ala-CGC    GGGGGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACGGG----GUU 55
chr-LG09.trna470-Ala-CGC    GGGGGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACGGG----GUU 55
chr-LG14.trna33-Ala-CGC     GGGGGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACGGG----GUU 55
chr-LG14.trna202-Ala-CGC    GGGGGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACGGG----GUU 55
chr-LG14.trna207-Ala-CGC    GGGGGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACGGG----GUU 55
chr-LG19.trna127-Ala-CGC    GGGGGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACAGG----GUU 55
chr-LG19.trna128-Ala-CGC    GGGGGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACAGG----GUU 55
chr-LG15.trna151-Ala-CGC    GGGGGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACGGG----GUU 55
chr-LG06.trna314-Ala-CGC    GGGGGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACAGG----GUU 55
chr-LG16.trna55-Ala-CGC     GGGGGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACAGG----GUU 55
chr-LG15.trna210-Ala-CGC    GGGGGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACAGG----GUU 55
chr-LG06.trna296-Ala-CGC    GGGGGUGUAGCUCAUAUGGUAGAGUGCUCGCUUCGCAUGCGAGAGGC-ACAGG----GUU 55
chr-LG06.trna293-Ala-CGC    GGGGGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACAGG----GUU 55
chr-LG15.trna34-Ala-CGC     GGGGGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACAGG----GUU 55
chr-LG15.trna26-Ala-CGC     GGGGGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACAGG----GUU 55
chr-LG15.trna211-Ala-CGC    GGAGGUGUAGCUCAUAUGGUAGAGCACUCGCUUCGCAUGCAAGAGGC-ACGGG----GUU 55
chr-LG06.trna343-Ala-CGC    GGGGGUGUAGCUCAUAUGGUAGAGCACUCGCUUCGCAUGCGAGAGGC-ACAGG----GUU 55
chr-LG06.trna299-Ala-CGC    GGGGGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-AUGGG----GUU 55
chr-LG06.trna311-Ala-CGC    GGGGGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-AUGGG----GUU 55
chr-LG15.trna27-Ala-CGC     GGGGGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-AUGGG----GUU 55
chr-LG06.trna274-Ala-CGC    GGGGGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-AUGGG----GUU 55
chr-LG06.trna330-Ala-CGC    GGGGGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACGGG----GUU 55
chr-LG15.trna21-Ala-CGC     GGGGGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACGGG----GUU 55
chr-LG16.trna49-Ala-CGC     GGGGGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACGGG----GUU 55
chr-LG06.trna324-Ala-CGC    GGGGGUGUAGCUCAAAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACGGG----GUU 55
chr-LG06.trna325-Ala-CGC    GGGGGUGUAGCUCAAAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACGGG----GUU 55
chr-LG06.trna304-Ala-CGC    GGGGGUGUAACUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-AUGGG----GUU 55
chr-LG06.trna315-Ala-CGC    GGGGGUGUAGCUCAUAUGGUAGAGCGCUCACUUCGCAUGCGAGAGGC-ACGGG----GUU 55
chr-LG06.trna290-Ala-CGC    GGGGAUGUAGCUCAUAUGGUAGAGUGCUCGCUUCGCAUGCGAGAGGC-ACGGG----UUU 55
chr-LG06.trna291-Ala-CGC    GGGGGUGUAGCUCAUAUGAUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACGGG----UUU 55
chr-LG06.trna350-Ala-CGC    GGGGGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCAAAAGGC-ACGGG----GUU 55
chr-LG15.trna35-Ala-CGC     GGGGGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGUGAGAGGC-ACGGG----GUU 55
chr-LG06.trna340-Ala-CGC    GGUGGUGUAGCUCAUAUAGUAGAGCGCUCGCUUCGCAUGUGAGAGGC-ACAGG----GUU 55
chr-LG06.trna341-Ala-CGC    GGUGGUGUAGCUCAUAUAGUAGAGCGCUCGCUUCGCAUGUGAGAGGC-ACAGG----GUU 55
chr-LG16.trna51-Ala-CGC     GGGGGUGUAGCUCAUAUGGUUAAGCGCUCGCUUCGCAUGCGAGAGGC-AUGGG----GUU 55
chr-LG06.trna278-Ala-CGC    GGGGGUGUAGCUCAUGUGAUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACGAG----GUU 55
chr-LG06.trna279-Ala-CGC    GGGGGUGUAGCUCAUGUGAUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACGAG----GUU 55
chr-LG06.trna280-Ala-CGC    GGGGGUGUAGCUCAUGUGAUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACGAG----GUU 55
chr-LG16.trna58-Ala-CGC     GGGGGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACGGG----GUU 55
chr-LG06.trna292-Ala-CGC    GGGGGUGUAGCUCAUAUGGUAGAGUGCUCGCUUCGCAUGCGAGAGGC-ACGGG----GUU 55
chr-LG06.trna269-Ala-CGC    GGGGGCGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACGGG----GUU 55
chr-LG15.trna29-Ala-CGC     AGGGGUGUAGAUCAUAUGGUAGAGCGCUCACUUCGCAUGCGAGAGGC-ACGGG----GUC 55
chr-LG06.trna275-Ala-CGC    GG-GGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-AUAGG----GUU 54
chr-LG18.trna109-Ala-CGC    GGGGGUGUAGCUCA--UGGUAGAGCACUCGCUUCGCAUGCGAGAGGC-ACGGG----GUU 53
chr-LG02.trna25-Ala-CGC     GGGAGUGUAGCUCACAUGGUAGAGCGCUCGCUUCGCAUGUGAGAGGC-ACGGA----GUU 55
chr-LG16.trna52-Ala-CGC     GGGGGUGUAGCUCAUAUGGUAGAGUGCUCGCUUCGCAUGUGAGAGGC-ACAUG----GUU 55
chr-LG06.trna348-Ala-CGC    GGGAGUGUAGCUCAUAUUGUAGAUCACUCGCUUCGCAUGUGAGAGGC-ACGGG----GUU 55
chr-LG06.trna271-Ala-CGC    GGGGGUGUAGCUUAUUUGGUAUGGCGCUCACUUCGCAUGCGAGAGGC-AC-GG----GUU 54
chr-LG06.trna318-Ala-CGC    GGGUGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACAGG----GUU 55
chr-LG18.trna110-Ala-CGC    CGGAGUGUAGCUCUUAUGGUAGAGCGCUUGCUUCGCAUGCGAGAGAC-ACGGG----GUU 55
chr-LG16.trna59-Ala-CGC     GGGGGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCGUGCC---UGC-ACGGG----GUU 52
chr-LG01.trna482-Ala-CGC    GGGGAUGUAGCUCAGAUGGUAGAGCGCUAGCUUCGCAUGUGAAAAUU-AC--G----GUG 53
chr-LG03.trna50-Ala-CGC     GGGGAUGUAGCUCAGAUGGUAGAGCGCUCGCUUCGCAUGUGAGAAGU-AC--G----GUG 53
chr-LG01.trna503-Ala-CGC    GGGGAUGUAGCUCAGAUGGUAGAGCGCUCGCUUCGCAUGUGAGAAGU-AC--G----GUG 53
chr-LG03.trna63-Ala-CGC     GGGGAUGUAGCUCAGAUGGUAGAGCGCUCGCUUCGCAUGUGAGAAGU-AC--G----GUG 53
chr-LG15.trna209-Ala-CGC    GGGGGUGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGAGGC-ACAGG----G-- 53
chr-LG06.trna301-Ala-CGC    -GGGGUGUAGCUCAUAUGGUAGAGCGAUCGCUUCGCAUGCGAGAGAC-ACAUG----GUU 54
chr-LG16.trna61-Ala-CGC     -GGGGUGUAGCUCAUAUGGUAGAGCGAUCGCUUCGCAUGCGAGAGAC-ACAUG----GUU 54
chr-LG06.trna345-Ala-CGC    GGGGGUGUAGCUCGUAUGGUAGAGAGCUCGCUUCGCAUGCGAGAGGC-ACAGA----GUU 55
chr-LG06.trna320-Ala-CGC    GG---UGUAGCUCAUAUGGUAGAGCGCUCGCUUCGCAUGCGAGGCACAAGUUUCAAUCUU 57
                                 .........10........20........30........40........50........
```



```
                                 .....)))))))...)).))))
chr-LG06.trna303-Ala-CGC    CAAUCCUCUGCACCUCCUUAAUA 78
chr-LG18.trna13-Ala-CGC     CGAUACCCUGCA---UC--UCCA 73
chr-LG18.trna12-Ala-CGC     CGAUACUCUGCA---UC--UCCA 73
chr-LG01.trna486-Ala-CGC    UGAUACCCUGCA---UC--UCCA 73
chr-LG01.trna436-Ala-CGC    CGAUACCCUGCA---UC--UCCA 73
chr-LG07.trna131-Ala-CGC    UGAUACCCUGCA---UC--UCCA 73
chr-LG07.trna89-Ala-CGC     CGAUACCUUGCA---UC--UCCA 73
chr-LG03.trna322-Ala-CGC    CGACACCCUGCA---UC--UCCA 72
chr-LG15.trna36-Ala-CGC     CAAUUCCCCGCA---CC--UCCA 73
chr-LG06.trna267-Ala-CGC    GAAUUCCCUACA---CC--UCCA 73
chr-LG15.trna32-Ala-CGC     CAAUUCCCCGCA---CC--UCCA 73
chr-LG15.trna33-Ala-CGC     CAAUUCCCCGCA---CC--UCCA 73
chr-LG06.trna339-Ala-CGC    CAAUUCCCUGCA---CC--UCCA 73
chr-LG06.trna277-Ala-CGC    CAAUUCCUUGCA---CC--UCCA 73
chr-LG06.trna347-Ala-CGC    CGAUUCCCUGCA---CC--UCCA 73
chr-LG15.trna24-Ala-CGC     CAAUUCCCCGCA---CC--UCCA 73
chr-LG06.trna300-Ala-CGC    CAAUUCCUUGCA---CC--UCCA 73
chr-LG02.trna24-Ala-CGC     CGAUUCCCCGCA---CC--UCCA 73
chr-LG02.trna213-Ala-CGC    CGAUUCCCCGCA---CC--UCCA 73
chr-LG06.trna398-Ala-CGC    CGAUUCCCCGCA---CC--UCCA 73
chr-LG07.trna171-Ala-CGC    CGAUUCCCCGCA---CC--UCCA 73
chr-LG09.trna470-Ala-CGC    CGAUUCCCCGCA---CC--UCCA 73
chr-LG14.trna33-Ala-CGC     CGAUUCCCCGCA---CC--UCCA 73
chr-LG14.trna202-Ala-CGC    CGAUUCCCCGCA---CC--UCCA 73
chr-LG14.trna207-Ala-CGC    CGAUUCCCCGCA---CC--UCCA 73
chr-LG19.trna127-Ala-CGC    CGAUUCCCUGCA---CC--UCCA 73
chr-LG19.trna128-Ala-CGC    CAAUUCCCUGCA---CC--UCCA 73
chr-LG15.trna151-Ala-CGC    CAAUUCCCCGCA---CC--UCCA 73
chr-LG06.trna314-Ala-CGC    CAAUUCCCUGCA---CC--UCCA 73
chr-LG16.trna55-Ala-CGC     CAAUUCCCUGCA---CC--UCCA 73
chr-LG15.trna210-Ala-CGC    CAAUUCCCUGCA---CC--UCCA 73
chr-LG06.trna296-Ala-CGC    CAAUUCCCUGCA---CC--UCCA 73
chr-LG06.trna293-Ala-CGC    CAGUUCCCUGCA---CC--UCCA 73
chr-LG15.trna34-Ala-CGC     CAAUUCCCCGCA---CC--UCCA 73
chr-LG15.trna26-Ala-CGC     CAAUUCCCCGCA---CC--UCCA 73
chr-LG15.trna211-Ala-CGC    CAAUUCCCCGCA---CC--UCCA 73
chr-LG06.trna343-Ala-CGC    CAAUUUCCUGCA---CC--UCCA 73
chr-LG06.trna299-Ala-CGC    CAAUUCCCUGCA---CC--UCCA 73
chr-LG06.trna311-Ala-CGC    CAAUUCCCUGCA---CC--UCCA 73
chr-LG15.trna27-Ala-CGC     CAAUUCCCUGCA---CC--UCCA 73
chr-LG06.trna274-Ala-CGC    CAAUUCCUUGCA---CC--UCCA 73
chr-LG06.trna330-Ala-CGC    CAAUUCCCUGCA---CC--UCCA 73
chr-LG15.trna21-Ala-CGC     CAAUUCCCUGCA---CC--UCCA 73
chr-LG16.trna49-Ala-CGC     CAAUUCUCUGCA---CC--UCCA 73
chr-LG06.trna324-Ala-CGC    CAAUUCCCUGCA---CC--UCCA 73
chr-LG06.trna325-Ala-CGC    CAAUUCCCUGCA---CC--UCCA 73
chr-LG06.trna304-Ala-CGC    CAAUUCCCUGCA---CC--UCCA 73
chr-LG06.trna315-Ala-CGC    CAAUUCCCUGCA---CC--UCCA 73
chr-LG06.trna290-Ala-CGC    CAAUUCCCUGCA---CC--UCCA 73
chr-LG06.trna291-Ala-CGC    CAAUUCCCUGCA---CC--UCCA 73
chr-LG06.trna350-Ala-CGC    CAAUUUCCUGCA---CC--UCCA 73
chr-LG15.trna35-Ala-CGC     CAAUUCCCCGCA---CC--UCCA 73
chr-LG06.trna340-Ala-CGC    CAAUUCCUUGCA---CC--UCCA 73
chr-LG06.trna341-Ala-CGC    CAAUUCCUUGCA---CC--UCCA 73
chr-LG16.trna51-Ala-CGC     UAAUUCCCUGCA---CC--UCCA 73
chr-LG06.trna278-Ala-CGC    CAAUUCCCUGCA---CC--UCCA 73
chr-LG06.trna279-Ala-CGC    CAAUUCCCUGCA---CC--UCCA 73
chr-LG06.trna280-Ala-CGC    CAAUUCCCUGCA---CC--UCCA 73
chr-LG16.trna58-Ala-CGC     CAAUUACCUGCA---CC--UCCA 73
chr-LG06.trna292-Ala-CGC    CAAUUCCCUGUG---CC--UCCA 73
chr-LG06.trna269-Ala-CGC    -AAUUCCCUACA---CC--UCCA 72
chr-LG15.trna29-Ala-CGC     CAAUUCCCUGCA---CC--UCCA 73
chr-LG06.trna275-Ala-CGC    AAAUUCCCUGCA---CC--GCCA 72
chr-LG18.trna109-Ala-CGC    CGAUUCCCUGCA---CC--UCCA 71
chr-LG02.trna25-Ala-CGC     CGAUUCCCUGCA-C-CU--CC-A 73
chr-LG16.trna52-Ala-CGC     CAAUUCCCUGCG-G-CC--UCCA 74
chr-LG06.trna348-Ala-CGC    CAAUUCCCUGCA---CC--UCCA 73
chr-LG06.trna271-Ala-CGC    CAAUUCCCUGCA---CC--UCCA 72
chr-LG06.trna318-Ala-CGC    CAAUUCCCUCCC-UACACCUCCA 77
chr-LG18.trna110-Ala-CGC    CGAUUCCCCGCA-CAUU-AUCGA 76
chr-LG16.trna59-Ala-CGC     CAAUUCCCUGCA---CC--UCCA 70
chr-LG01.trna482-Ala-CGC    CGAUACCGUGCU---UC--UCCA 71
chr-LG03.trna50-Ala-CGC     CGACACCCUGCA---UC--UCCA 71
chr-LG01.trna503-Ala-CGC    CGACACCCUGCA---UC--UCCA 71
chr-LG03.trna63-Ala-CGC     CGAUACCCUGCA---UC--UCCA 71
chr-LG15.trna209-Ala-CGC    -AAUCCC--GCA---CC--UCCA 68
chr-LG06.trna301-Ala-CGC    CAAUUCCAUAGG----UUUAAUA 73
chr-LG16.trna61-Ala-CGC     CAAUUCCAUAGG----UUUAAUA 73
chr-LG06.trna345-Ala-CGC    CAAUUCCUUUGA----AUUCUUA 74
chr-LG06.trna320-Ala-CGC    AGGUUCAAAUCCUUGGAGAAUUG 80
                                 .........70........80..
```